



The University of Georgia

AI Newsletter

Institute for Artificial Intelligence
The University of Georgia
Athens, GA 30602-7415 U.S.A.

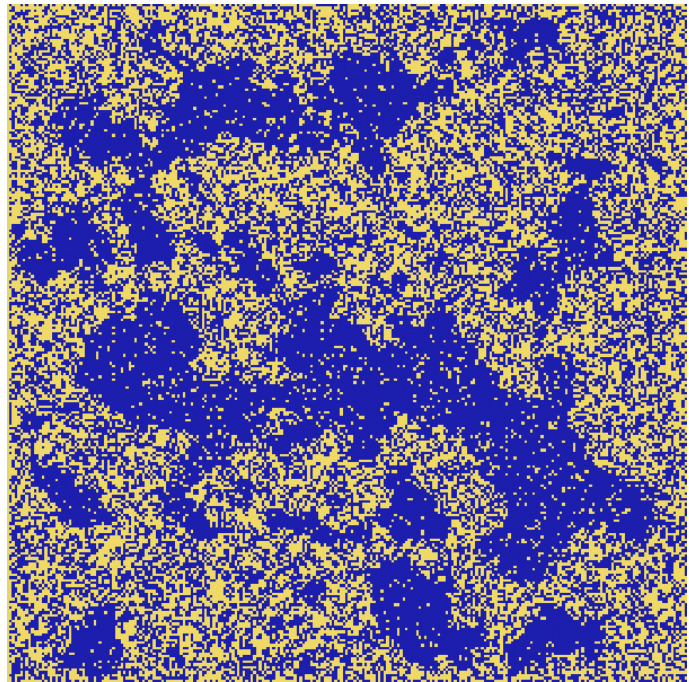
Spring 2013

Research Spotlight: Modeling How Human Languages Change

Do you talk the same way as your neighbors? Maybe, if you have enough neighbors who talk the same way. The spread of language features is a complex system not unlike Conway's Game of Life (remember that from intro programming?) or other cellular automata.

AI Faculty member **Dr. Bill Kretzschmar** has received an American Council of Learned Societies (ACLS) Digital Innovation Fellowship to do computer simulation of the way human languages vary and develop across space and time – a project he describes as “science and engineering in the service of the humanities, not as a replacement for the humanities.”

Collaborating with Dr. Ilkka Juuso of the University of Oulu in Finland and with AI graduate student **Thomas Bailey**, Dr. Kretzschmar is modeling language change with cellular automata. The picture shows the emergence of structured regions in a simulated dialect map that was originally random, after running more than 1000 iterations of the automaton.



News: AI Faculty Promotions

The University has announced two promotions of AI Faculty members: **Dr. Adam Goodie** to **Professor of Psychology**; **Dr. Michael Covington** to **Senior Research Scientist Emeritus**. Congratulations!

News: We're in the Athenaeum

The University Libraries have established a permanent home for material that the University has published electronically, so that individuals and departments won't have to maintain web sites of their own publications forever. The new web site is located at <http://athenaeum.libs.uga.edu> and a section for the IAI is being created within it. The IAI section will include all AI Technical Reports that are available in electronic form, as well as many theses, faculty and student publications, and free online copies of *Prolog Programming in Depth* and *Natural Language Processing for Prolog Programmers*. Keep your eyes on this promising web site!



News: Luncheon and Industry Visits



The IAI held its traditional spring luncheon on April 12. Students, faculty, alumni, and guests enjoyed a buffet of sandwiches and an opportunity to visit. Dr. Michael Covington was presented a plaque in honor of his retirement. (In the pictures: Joanna Sullivan, Shu Zhang, Bill Hollingsworth, Michael Covington.)

Numerous visitors also favored us with their presence this semester, including industry associates Krystina Francis (FormFree), Don Turner and Eric Drucker (Veloxiti), David Ducrest (IS3D Interactive Science), and Louri Roberts (Peachtree Medical Billing). Enthusiasm for the Industrial Partners and Associates Program is building as the economy recovers and employers compete to hire our students.

News: Student Wins Scholarship to Study in Australia

Cognitive Science undergraduate student **Regy Perlera** has received a scholarship for study abroad at the University of Sydney, Australia. The award is in two parts, a Katherine John Murphy Study Abroad Scholarship in the amount of \$500 and a \$1000 RLST Athens Area High School Study Abroad Scholarship, both awarded by the University of Georgia's Office of International Education.



Letter from the Director

Welcome to the last newsletter edited by soon-to- retire Michael Covington! We had a small retirement celebration during our spring luncheon where we presented Michael with a cool retirement plaque, and had him say a few words (yep, some were in Latin as you might have guessed ☺). Be sure to check out the pictures on our web page.

We reported in the last newsletter that the Dean had finally agreed to approve our request to begin a hiring campaign for Michael's replacement. The search committee (Prashant Doshi, Sarah Wright, Chuck Cross, Ron McClendon, Khaled Rasheed, and Michael, as an alternate) did a great job evaluating the applicants. The long list was shortened then those applicants were interviewed briefly via Skype. The Skype interview phase worked out extremely well. Several applicants were identified for campus visit invitations. Meanwhile, they were also receiving offers from elsewhere, and as this goes to press, we are still conducting visits and interviews.

During this whole hiring process, the Institute has been moving smoothly through the semester. MSAI applications for this coming fall have begun to flow in, and we've had two MSAI students graduate this past December (Weixin Ling and Sivapriya Kaza). Weixin had a research paper accepted for publication at the IEA/AIE'13 conference to be held in The Netherlands this summer. Also, of note is the progress being made by the Faculty of Robotics initiated by Prashant Doshi. Check out their (currently under construction but to become live soon) web site at: <https://web3.ovpr.uga.edu/robotics/>. Cognitive Science continues to attract a large number of undergraduates.

Don't forget, feel free to stop by and/or email us just to let us know how things are going with you. We are always keen to hear about your latest activities. Keep in touch!

Don Potter
Director, IAI

Recent Theses

Weixin Ling, *Virus Transmission Genetic Algorithm*

Sivapriya Kaza, *Quantification of Bioirrigation using Image Analysis*

For a copy of any thesis, e-mail shbrooks@uga.edu.

Selected Publications and Presentations

Asiaee, Amir; Doshi, Prashant; Sahoo, Satya; Parikh, Priti; Manning, Todd; Sheth, Amit; and Tarleton, Rick. 2013. From questions to effective answers: Knowledge-driven querying for life sciences data. Data Integration in the Life Sciences Conference (DILS), Montreal.

Kretschmar, William; Kretschmar, Brendan; and Brockman, Irene. 2013. Scaled measurement of geographic and social speech data. *Literary and Linguistic Computing*. doi: 10.1093/lc/fqs058.

Ling, Weixin, and Potter, W. D. 2013. Virus transmission genetic algorithm. Proceedings, 26th International Conference on Industrial, Engineering, and Other Applications of Applied Intelligent Systems (IEA-AIE 2013), Amsterdam, The Netherlands.

Nadig, Karthik; Potter, Walter; Hoogenboom, Gerrit; and McClendon, Ronald (2013) Comparison of individual and combined ANN models for prediction of air and dew point temperature. *Applied Intelligence*. doi: 10.1007/s10489-012-0417-1.

Shan, Y., P. Bettinger, C. Cieszewski, and W. Wang. 2012. Pitfalls and potential of particle swarm optimization for contemporary spatial forest planning. *Forest Systems* 21(3): 468-480.

Sonu, Ekhlhas, and Doshi, Prashant. 2013. Bimodal switching for online planning in multiagent settings, International Joint Conference on AI (IJCAI), Beijing.

Venkadesh, Siva; Hoogenboom, Gerrit; Potter, Walter; and McClendon, Ronald (2013) A genetic algorithm to refine input data selection for air temperature prediction using artificial neural networks. *Applied Soft Computing* 13: 2253-2260.

How to Sponsor Research

As an industrial partner or associate of the IAI, you can be involved in our research four ways:

Collaboration, especially student projects. It doesn't necessarily cost anything to work with us. We are always looking for good research topics, especially for master's theses.

Sponsored research. You can contract with us through the University of Georgia Research Foundation (UGARF) to do research for your company. *We are always looking for research sponsors.*

Donations. If you don't need confidentiality or a specific deliverable, you can simply make a gift to the IAI designated to support a particular research program. Donations are made through the Arch Foundation and are fully tax-deductible.

Consulting. You can hire faculty members or graduate students to work for you part-time as independent contractors. The University encourages this. It's a good way to do a small project with a high level of confidentiality. Consulting projects often grow into sponsored research.

We also invite all industrial partners and associates to **come and visit us** and speak with groups of students. This is your "inside track" to recruiting.

The AI Newsletter is published twice a year. For more information about the Institute's activities, e-mail shbrooks@uga.edu or look at www.ai.uga.edu. Thanks for your interest!

